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Treatment of Traumatized Children

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Children are exposed to a wide range of traumatic life experiences. These can include physical and sexual abuse, war, displacement as refugees, natural and technical disasters, witnessing domestic violence, catastrophic illnesses, and motor vehicle accidents. Exposure to traumatic events can have wide-ranging behavioral and psychological consequences, including increased propensity to anger, aggression, suicidality, substance dependence, health care utilization, learning problems, and engaging in criminal acts (Giaconia et al. 1995). Psychiatric sequelae of childhood victimization also include developmental delays, increased anxiety and depressive symptoms, and sexually inappropriate and regressive behaviors (Kendall-Tackett et al. 1993). There is increasing recognition that childhood trauma can give rise to childhood posttraumatic stress disorder (PTSD).

Because trauma-related symptoms are associated with functional impairment and can adversely affect child development, traumatization of children and adolescents is a significant public health concern. Moreover, society incurs substantial direct and indirect costs as a result of child traumatization. For example, it has been estimated that each year more than 3 million children are maltreated (Poe-Yamagata 1997) and that direct services for these children currently cost over $20 billion annually (Peterson and Brown 1994). Beyond these direct costs, the impact of child victimiza-

tion on families, schools, and communities is substantial. It results in parental lost workdays, social fragmentation, and lost potential.

Given that significant proportions of children exposed to traumatic events develop PTSD, there has been an increased interest in treating traumatic stress in children and adolescents. This chapter provides a review the efficacy of current treatments of child and adolescent PTSD and provides practical conceptual and technical guidelines for clinicians undertaking the treatment of traumatized children. Our goal is to increase sensitivity to developmental issues as they affect trauma treatment in general.

Childhood Victimization and PTSD

PTSD is the most frequently occurring disorder arising from exposure to traumatic events (Gurwitch et al. 1998). The symptoms of PTSD in children and adults are similar in many ways. However, in children reexperiencing symptoms may additionally include traumatic play involving the event and frightening dreams without recognizable content (in contrast to adults, who are more likely to have specific dreams of the event). As do adults, children with PTSD avoid reminders of the trauma and can develop attachment difficulties. Also, as do adults they frequently develop symptoms of hyperarousal and increased anger and aggression.

Prevalence of PTSD in Children

As in adult PTSD, estimates of the prevalence of PTSD in children show a wide range depending on factors relating to the type of event, timing, and nature of the assessment. However, unlike adult PTSD, there are no large scale epidemiological studies that have contributed population-based estimates of exposure to traumatic events and the resulting base rates of disorders (including PTSD) in children. According to the child literature, events involving the witnessing of parental murder, kidnapping, direct shooting or violence, and domestic violence are associated with the greatest prevalence of PTSD. Of children who witnessed a parental murder (Malmquist 1986), 100% were found to have PTSD. Terr (1981) reported 100% of children who had been involved in a school bus kidnapping showed posttraumatic emotional sequelae. Prevalence rates of PTSD have ranged from 27% of children exposed to a fatal school shooting (Schwarz and Kowalski 1991) to 60% of children exposed to a schoolground sniper attack (Pynoos et al. 1987). One year after a sniper attack, 74% of the children on the playground continued to show PTSD symptoms (Nader et al. 1990). Horowitz and colleagues (1995) reported that 67% of adolescent girls exposed to urban violence were diagnosed with PTSD. In a related context, Kinzie

and colleagues (1986) reported that criteria for PTSD were met by 50% of adolescent Cambodian refugees. Of surviving siblings who lost a brother or sister due to an accidental death or homicide, 45% developed PTSD (Applebaum and Burns 1991). And of children exposed to domestic violence (Kilpatrick et al. 1997), 95% were found to have PTSD.

Researchers studying sexually abused children and physically abused children have found PTSD prevalence rates to vary across studies, yet the prevalence rates in cases of sexual abuse tend to be higher than in cases relating to physical abuse. In studies of sexually abused children, researchers (Deblinger et al. 1989; Dykman et al. 1997; Kiser et al. 1988; Livingston et al. 1993; McLeer et al. 1992, 1994) have reported PTSD prevalence rates ranging from 20.7% (Deblinger et al. 1989) to 90% (Kiser et al. 1988). Estimates of the prevalence of PTSD in physically abused children range from none (Pelcovitz et al. 1994) to 6.9% (Deblinger et al. 1989), to 23% (Dykman et al. 1997) and to 33% (Livingston et al. 1993). Studies of child physical and sexual abuse that have not differentiated the rates of PTSD associated with each type of abuse report prevalence ranging from 35% (Famularo et al.1994) to 39% (Famularo et al. 1992) to 50% (Dykman et al. 1997), and to 55% (Kiser et al. 1988). Combining rates appears to result in understating the effects of sexual abuse and inflating the effects of physical abuse.

Research has also examined PTSD as a sequela of life-threatening illnesses and automobile accidents and has found prevalence rates generally lower than those relating to violent and abusive situations. Pelcovitz and colleagues (1998) reported that 35% of adolescent subjects with cancer developed PTSD. Similarly, Stuber and colleagues (1991) reported that all the children they studied developed mild to moderate symptoms of PTSD after bone marrow transplants. Stallard and colleagues (1998) reported that 34.5% of children involved in a road traffic accident were found to have PTSD.

Children have also been found to develop PTSD after exposure to natural disasters; however, prevalence rates tend to be much lower than those described above, with the exception of a study involving children attending a school that experienced a high storm impact (Shaw et al. 1995). In a study that followed the Three Mile Island disaster, Handford and colleagues (1986) found no PTSD. Shannon and colleagues (1994) reported that after Hurricane Hugo, PTSD was found to range between 3.1% and 9.2%, depending on the child's age and sex. After Hurricane Andrew, which was a much more damaging hurricane, Garrison and colleagues (1995) found that 3% of adolescent boys and 9% of adolescent girls had PTSD, whereas LaGreca and colleagues (1996) reported 30% of children experiencing severe to very severe PTSD 3 months after Hurricane Andrew. Follow-up

revealed 18% with severe or very severe PTSD at 7 months and 13% with severe or very severe PTSD after 10 months. In the study involving the high storm impact (which was also reporting on Hurricane Andrew), Shaw and colleagues (1995) reported exceptionally high PTSD prevalence of up to 87%. In 1991, Green and colleagues reported that of children exposed to the Buffalo Creek dam collapse, approximately 37% had a probable diagnosis of PTSD 2 years after the disaster. In considering the range of PTSD prevalence after natural disaster, it should be noted that natural disasters differ profoundly in their psychological impact. For example, the psychological characteristics of fears about radiation contamination resulting from a technological disaster such as the Three Mile Island nuclear power plant accident are quite different than the experience of direct exposure to a hurricane.

Efficacy of Current Treatments of Child and Adolescent PTSD

A review of the literature demonstrates that there are approximately 80 reports describing the treatment of childhood trauma; however, the majority of these papers are anecdotal. Only seven of the studies have examined the efficacy of one treatment compared with an alternative or no-treatment group. These studies are summarized in Table 5–1.

The studies were critically reviewed for adherence to rigorous standards of methodology. Foa and Meadows' (1997) "gold standards" for treatment outcome research (clearly defined target symptoms, reliable and valid measures, use of blind evaluators, assessor training, unbiased assignment to treatment, manualized treatment, and treatment adherence), as well as Kazdin and Weisz's (1998) and Kazdin's (1993, 1997) recommendations for evaluating empirically supported treatments guided this critical review. Table 5–2 outlines the adherence to these standards by the studies.

Of these seven studies, only two randomized, controlled studies directly evaluated the treatment of children with diagnosed PTSD. One focused on the treatment of sexually abused children (Deblinger et al. 1996), whereas the other focused on children with disaster-related PTSD (Chemtob et al., in press). A third study (March et al. 1998) addressed the treatment of children diagnosed with PTSD, but employed a "single-case-across-setting experimental design" (a quasi–waiting list design). This study only marginally met the comparison group design requirement. Although these three studies included a structured assessment of PTSD as a diagnosis by clinically trained assessors as part of their outcome measures, the remaining four studies assessed the impact of treatment on PTSD-

TABLE 5–1. Studies of traumatic stress with PTSD outcome measure

Study	Treatment and study type	Subjects	Treatment type/ length	Follow-up/ time since trauma	Past/ concurrent treatment	Findings
Deblinger et al. 1996	Individual CBT Controlled randomized	100, sexual abuse 25, child CBT 25, parent CBT 25, parent/ child CBT 25, community care 17 boys, 83 girls Mean age, 9.84 10 dropouts	12 weekly sessions: child or parent only (45 min); child/parent (90 min)	None/66% before 6 months, 16% 6 months to 2 years, 18% over 2 years	Not reported	Child and parent/child condition showed significant decreases in overall PTSD (K-SADS-E) compared with community care. Parent and parent/child conditions showed significant decreases in children's externalizing behavior (CBCL) and depression (CDI) and greater improvement in parenting skills (Parent Practices Questionnaire).
Chemtob et al. 2002	Individual EMDR Controlled randomized	32, natural disaster 17, EMDR 15, control 10 boys, 22 girls Mean age, 8.4 2 dropouts	EMDR treatment consisted of one diagnostic session and three weekly treatment sessions	6 months/3 years	Previous school-based brief psychosocial treatment	EMDR resulted in large reduction in level of symptoms on the Crisis Reaction Index, and significant reductions in anxiety (RCMAS) and depression (CDI). Treatment effects were maintained at 6-month follow-up.

TABLE 5–1. Studies of traumatic stress with PTSD outcome measure *(continued)*

Study	Treatment and study type	Subjects	Treatment type/ length	Follow-up/ time since trauma	Past/ concurrent treatment	Findings
March et al. 1998	Group CBT Single case across experimental setting	17, single-incident stressor 5 boys, 10 girls Mean age, 12.1 3 dropouts	18 group CBT sessions	6 months/ 1.5–2.5 years	None	57% no longer met criteria for PTSD (CATS; CAPS-C) at end of treatment, 86% no longer met criteria 6 months after treatment.
Chemtob et al., in press	Individual or group CBT vs. waiting list Controlled randomized	249, natural disaster 176, group CBT 73, individual CBT 97 boys, 152 girls Mean age, 8.2 34 dropouts	Four weekly individual or group CBT sessions with successive waves of 4–8 children serving as waiting list control subjects	1 year/2 years	Not reported	Posttreatment trauma symptoms (Kauai Reaction Index) significantly reduced with no difference between group and individual treatment.

TABLE 5–1. Studies of traumatic stress with PTSD outcome measure *(continued)*

Study	Treatment and study type	Subjects	Treatment type/ length	Follow-up/ time since trauma	Past/ concurrent treatment	Findings
Goenjian et al. 1997	Group and individual CBT Controlled comparison	63, natural disaster 35, CBT 29, control 22 boys, 41 girls Mean age, 13.2 No attrition	Four half-hour and two 1-hour trauma/grief-focused CBT brief therapy sessions over 3-week period	18 months after treatment/ 18 months after disaster	None	Experimental treatment resulted in alleviating PTSD (Child PTSD Reaction Index) symptoms and preventing worsening of depressive symptoms (Depression Self-Rating Scale) compared with the control group.
Celano et al. 1996	Individual CBT plus metaphoric techniques Controlled randomized	47, sexual abuse 15, CBT 17, supportive therapy 32 girls and mothers Mean age, 10.5 15 dropouts	1-hour sessions for 8 weeks, half session with mother and half with child	None/within 1 to 26 months after abuse	None had received treatment for abuse	Both groups showed decreased PTSD (CITIES-R) and internalizing and externalizing behavior (CBCL). No change noted in betrayal and sex-related beliefs. CBT showed decrease in caretaker self-blame and expectations of undue negative impact on the child.

TABLE 5–1. Studies of traumatic stress with PTSD outcome measure *(continued)*

Study	Treatment and study type	Subjects	Treatment type/ length	Follow-up/ time since trauma	Past/ concurrent treatment	Findings
Yule 1992	Group CBT Controlled comparison	39, accident 24, CBT 15, control 39 girls Age, 4–15 years No attrition	Debriefing meeting 10 days after the disaster. Two small open groups	None/5 to 9 months	Not reported	After 5–9 months, treatment group showed significantly lower scores on the Impact of Events Scale and on fear survey.

Note. CAPS-C=Clinician-Administered PTSD Scale–Child and Adolescent Version; CATS=Child Abuse and Trauma Scale; CBCL=Child Behavior Checklist; CBT=cognitive-behavioral therapy; CDI=Child Depression Inventory; CITIES-R=Children's Impact of Traumatic Events Scales–Revised; EMDR=eye movement desensitization and reprocessing; K-SADS-E=Schedule for Affective Disorders and Schizophrenia for School-Age Children; RCMAS=Revised Children's Manifest Anxiety Scale.

TABLE 5–2. Gold standards for treatment outcome: studies with traumatic stress outcome measures

Study	PTSD or trauma symptoms	Clearly defined target symptoms	Reliable valid measures	Blind evaluators	Assessor training	Manualized replicable specific treatment	Random assignment	Treatment adherence
Deblinger et al. 1996	PTSD	Yes	Yes	No	Yes	Yes	Yes	Yes
Chemtobet al. 2002	PTSD	Yes	Yes	Yes	Yes	Yes	Yes	Yes
March et al. 1998	PTSD	Yes	Yes	No	Not reported	Yes	No	Not reported
Chemtobet al., in press	Trauma symptoms	Yes	Yes	Yes	Yes	Yes	Yes	Supervision only
Goenjian et al. 1997	Trauma symptoms	Yes	Yes	Not reported	Yes	Not reported	No	Not reported
Celano et al. 1996	Trauma symptoms	Yes	Yes	Yes	Yes	Yes	Yes	Supervision only
Yule 1992	Trauma symptoms	Yes	Yes	No	Not reported	No	No	Not reported

related trauma symptoms, primarily using self-report measures.

In the first of the three studies, Deblinger and colleagues (1996) reported on a controlled randomized treatment study aimed at determining the efficacy of short-term cognitive-behavioral treatment with sexually abused school-age children experiencing PTSD symptoms. The design compared three treatment conditions (a child-only intervention, a parent-only intervention, and combined child and parent intervention) to standard therapeutic care received in the community.

Participants included 100 sexually abused children recruited from community sources. Children ranged in age from 7 to 13, with a mean age of 9.84. Eighty-three percent of the participants were girls, including 72% Caucasian, 20% African-American, 6% Hispanic, and 2% other. The majority of the participating children had experienced the abuse within the past 6 months, whereas the rest had been abused during the previous 6-month to 2-year period. The children were clinically assessed and the group was found to be characterized by the following diagnoses: 71%, PTSD; 29%, major depression; 30%, oppositional defiant disorder; 20%, attention-deficit disorder; 11%, separation anxiety; 10%, overanxious; 6%, conduct disorder; 5%, specific phobia; and 1%, obsessive-compulsive disorder. Clearly, a large number of the children had substantial psychopathology.

Subjects were randomly assigned to conditions. No significant differences were found between the subjects in the four treatment conditions based on sex, age, ethnicity, identity of the perpetrator, frequency of contact sexual abuse, type of contact sexual abuse, use of force, and the pretreatment conditions. No significant differences were found between the 10 subjects who did not return for the posttreatment assessment compared with those who did complete treatment, except that the 10 subjects who did not return experienced significantly fewer incidents of contact sexual abuse.

The child intervention was described as consisting of a number of cognitive-behavioral methods, including gradual exposure, modeling, education, coping, and body safety skills training. The parent intervention combined several cognitive-behavioral strategies and involved application of these strategies in direct work with the child. Thus, the therapist taught the parents skills for responding therapeutically to their children's behaviors and needs through the use of modeling, gradual exposure, and supporting cognitive processing. Both interventions comprised 12 sessions. Participants in the community control condition were provided information about their children's symptoms and were strongly encouraged to seek therapy.

Therapists in the experimental treatment conditions were described as

mental health therapists and were required to follow a detailed treatment manual. They received intensive didactic training in the experimental treatment approach and used the treatment in one pilot case. Therapists also completed therapy procedure checklists for each session and participated in intensive weekly supervision, frequently using their audiotape sessions.

Target symptoms for treatment were defined as children's behavior problems, anxiety, depression, PTSD symptoms, and parenting practices. Instruments used to assess the children were the State-Trait Anxiety Inventory for Children (Spielberger 1973), Child Depression Inventory (M. Kovacs, "The Child Depression Inventory: A Self-Rated Depression Scale for School-Aged Youngsters," unpublished manuscript, University of Pittsburgh School of Medicine, 1983), Child Behavior Checklist (Achenbach and Edelbrock 1991), and Parenting Practices Questionnaire (Knight et al. 1982). The PTSD section of the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS-E) (Chambers et al. 1985) was used to diagnose PTSD. The therapist and a clinical research assistant collected the baseline assessment data over the course of two assessment periods. In addition, the therapist conducted the structured background and the K-SADS-E diagnostic interview (except the PTSD section), whereas the clinical research assistant administered all outcome measures including the PTSD section of the K-SADS-E and the parent and child self-report measures.

After treatment, PTSD symptoms (as assessed by K-SADS-E) were reduced when the child was included in treatment (the child-only and parent-child conditions). When a parent was included in treatment (parent-only and parent-child conditions), there were significantly greater decreases in children's externalizing behaviors (assessed by the Child Behavior Checklist) and depression (assessed by the Children's Depression Inventory) and more improvement in parenting skills (assessed by the Parenting Practices Questionnaire). Of the 25 children in the community control condition, 12 received treatment in the community. These children were compared with the 13 community control children who did not receive treatment. No difference was found between the two groups on the seven outcome scores.

The study design was notable for its inclusion of measures of PTSD symptoms as well as measures of depression, anxiety, and externalizing behavior. This provided an expanded perspective on the impact of the treatment. Information on the number and background of the therapists providing treatment and evaluating changes in comorbid psychopathology was not reported. Although impressive plans for extended follow-up at 3, 6, 12, and 24 months were described, the lack of follow-up information and the failure to use assessors blind to treatment condition limit

confidence in the results of this otherwise ambitious study.

The second study (Chemtob et al. 2002) was a randomized, controlled school-based treatment study using eye movement desensitization and reprocessing (EMDR). Participants were 32 children from seven different schools on Kauai who met criteria for PTSD 3 years after exposure to Hurricane Iniki, as well as 1 year after a brief school-based, counselor-administered psychosocial treatment. The study included children in grades 2–6 with a mean age of 8.4 years. There were 22 girls and 10 boys with 28% Filipino, 31% Hawaiian (or part), 12.5% Japanese, 19% Caucasian, and 9.5% mixed ethnic origins. In comparing the immediate and delayed treatment groups, no differences were found on gender, grade, socioeconomic level (as measured by free lunch status), age, exposure, or Kauai Recovery Index (KRI) (Hamada et al. 1996) scores.

The authors described EMDR as a client-paced exposure treatment that incorporates elements of psychodynamic treatments. The protocol provided for one diagnostic session and three weekly treatment sessions; in addition a written step-by-step treatment protocol was followed. Four doctoral-level clinicians (three men and one woman) provided the EMDR therapy. All were experienced clinicians who had completed at least Level I EMDR training. An experienced EMDR child clinical psychologist conducted 16 hours of child EMDR training. All treatment sessions were videotaped. To ensure adherence to EMDR, each therapist reviewed five of each other's videotaped sessions on a rotating basis. Furthermore, the therapists received frequent feedback from one of the researchers, and therapists met weekly as a group for 4 hours to review each other's treatment tapes.

Target symptoms were PTSD symptoms, clinically evaluated using the Children's Reaction Inventory (CRI) (Pynoos et al. 1987), and associated symptoms as measured by the Revised Children's Manifest Anxiety Scale (Reynolds and Richmond 1985) and the Child Depression Inventory. The KRI was used to screen children for the study. Visits to the school health nurse and Child Ratings of Treatment Helpfulness provided additional information. Independent examiners blind to group assignment administered the psychometric assessment instruments. The children's therapists administered the CRI to guide their clinical assessment of PTSD. The diagnostic interviews were videotaped and reviewed by a second clinician to offset possible interviewer bias. To be included in the study, a participant had to be identified as having PTSD by both evaluators.

Both groups showed large reductions in PTSD symptoms as measured by the CRI. They also showed significant reductions in both anxiety (assessed by the Revised Children's Manifest Anxiety Scale), and depression (assessed by the Children's Depression Inventory). These gains were main-

tained at 6 months. An additional finding was a reduction in the visits to the school nurse by children in the remitted group. Clinical significance was addressed by evaluating the number of children who no longer met criteria for PTSD and by identifying at both pretreatment and follow-up assessments the number of children in each severity category on the CRI. Results showed a reduction in the number of children in the moderate and severe categories and an increase in the number of children scoring in the mild category.

The finding of the effectiveness of EMDR with a multicultural population of children is an important addition to the treatment literature, and the results are impressive, especially given the brevity of treatment. Clinical significance was addressed through a 6-month follow-up, which showed that changes were maintained or improved. The finding of reductions in the number of visits to the school nurse among the remitted children buttressed the phenomenological findings of improved symptom outcomes.

Evaluation of possible comorbid diagnoses would have been useful, given the fact that not all of the children improved. It is possible that the children who did not improve had additional trauma or other psychopathology. The study design did not evaluate the impact of the passage of time on PTSD symptoms among children in the waiting-list condition. However, there was no change due to the passage of time on self-report measures of depression or anxiety, and the children in the study were identified on the basis of the persistence of their symptoms 3 years after the disaster and lack of response to prior treatment. The findings of this study are limited because it did not provide for independent assessors or an active comparison treatment.

In the third study, March and colleagues (1998) used a single case-across-setting experimental design (a quasi-experimental waiting list control group design) to validate a new treatment described as multimodality trauma treatment. The impact of the treatment on symptoms of PTSD—as well as on anxiety, anger, depression, and externalizing behaviors in children and adolescents—was evaluated. Participants were recruited through screening for PTSD all children in grades 4–9 at two elementary and two junior high schools (N=1,800) in a small southeastern town. Treatment participants were 17 children and adolescents with a diagnosis of PTSD, ranging in age from 10 to 15 years with a mean age of 12.1. The authors reported that the participants were 10 girls and 5 boys (inconsistent with their report of 17 total participants), with 7 of them being black, 1 Asian, 1 American Indian, and 8 white. Ten participants had experienced two or more traumatic events, whereas 7 experienced a single trauma. The average duration of PTSD symptoms was 1.5 years for elementary school children and 2.5 years for adolescents. Stressors experienced by the subjects were

automobile accidents, severe storms, accidental injury, severe illness, accidental and criminal gunshot injury, and fires. Stressors that happened to a loved one included death by criminal assault, illness, automobile accidents, death by fire, and gunshot injury.

The manual-driven multimodality trauma treatment protocol, an 18-week group cognitive-behavioral treatment, was based on social learning theory coupled with a current understanding of the social and biological bases of PTSD. Each session included a statement of goals, careful review of the previous week's work, introduction of new information, therapist-assisted "nuts and bolts" practice, homework for the coming week, and monitoring procedures. Treatment sessions included getting started, naming and mapping, anxiety management training 1 and 2, grading feelings, anger coping 1 and 2, cognitive training 1 and 2, introducing exposure and response prevention, pullout session, trial exposure, narrative exposure 1 and 2, worst moment exposure 1 and 2, right beliefs, relapse prevention, generalization, and a graduation party. No information was provided about the individuals who led the treatment groups.

The target symptoms were clearly defined. They included PTSD symptoms as measured by the Clinician-Administered PTSD Scale–Child and Adolescent Version (Nader et al. 1994), the Clinical Global Improvement Scale (Endicott et al. 1976), the Conners Teachers Rating Scale for externalizing symptoms (Conners 1969), the Multidimensional Anxiety Scale for Children (March et al. 1977), the Children's Depression Inventory, and the trait subscale of the State-Trait Anger Expression Inventory (Spielberger et al. 1985). The Nowicki-Strickland "What I Am Like" scale (Norwicki and Strickland 1973) was used to index locus of control. Blind evaluators were not used.

Fifty-seven percent of the subjects completing treatment no longer met diagnostic criteria for PTSD at posttreatment assessment. At the 6-month follow-up, 86% of the participants were free of PTSD symptoms. All other outcome measures except the Conners Teachers Rating Scale (which was within normal range at pretreatment assessment) showed marked improvement at posttreatment assessment and 6-month follow-up. The locus of control measure displayed no treatment effect between pretreatment and posttreatment assessments; however, a robust change in the direction of internal locus of control was shown between posttreatment and follow-up assessments.

The success of the use of a group approach with children who had experienced different types of trauma is a significant finding indicating the usefulness of a single model of intervention for different traumatized populations. The authors used a manualized treatment protocol, assessed for PTSD and other pathology associated with PTSD, and provided treatment

for a variety of stressors that caused PTSD. In addition, the screening approach had merit and may prove to be useful in other types of trauma-detection situations. The use of intent-to-treat analytical methods that account for missing data represented a step forward in the analysis of data in this field.

Unfortunately, there were some methodological problems that limit the generalizability of the findings of this study. Although the authors asserted that the single case across time, across location, and across school type (age) controlled for factors such as passage of time and maturation, a comparison treatment control group was absent. Thus, the study did not account for the general effects of therapeutic attention that may have been the reason for improvement. Also, the children were tested every other week, which may have created demand characteristics due to the constant testing. It is possible that a no-treatment control group that was tested every other week with the same instruments may have also shown improvement. Furthermore, participants were highly screened; to be included in treatment, children had to have high motivation to work on PTSD symptoms, cognitive ability, and social problem-solving skills. Subjects who experienced abuse-related PTSD and those with conduct problems were excluded. This appears to limit generalizability to smarter, better adjusted, and socially capable individuals. Blind evaluators were not used, and subjects were not randomized to groups. Information on treatment integrity was also incomplete.

In the most recent of the four studies assessing the impact of treatment on PTSD-related trauma symptoms, Chemtob and colleagues (in press) conducted a school-based randomized, controlled study with elementary school children 2 years after Hurricane Iniki. The goal of this study was to determine the feasibility of identifying children with persistent traumatic stress symptoms 2 years after the disaster, as well as to assess the efficacy of providing psychosocial treatment to affected children. A secondary goal was to compare group treatment and individual treatment. All children in Kauai's 10 public elementary schools attending 2nd through 6th grades (N=4,258) were screened. Children reporting the most severe trauma symptoms were assigned to treatment (approximately 5% of the screened population). Of the 249 children meeting the screening criteria, 215 completed treatment (86.3%). Of these 215, 61.4% were girls and 38.6% were boys, ranging in age from 6 to 12 with a mean age of 8.2 years. The ethnic breakdown of the subjects was 30.1% Hawaiian or part Hawaiian, 24.9% Caucasian, 19.7% Filipino, and 9.2% Japanese. Because of limitations in treatment capacity, the investigators randomized children into three treatment waves. There was approximately a 1-month lag from the end of treatment for one group until the beginning of treatment for the next group.

The second and third groups served as waiting list control subjects.

The intervention philosophy assumed that most children recover naturally from a disaster by mastering disaster-related psychological challenges. Children who do not recover are presumed to have been unable to master one or more of these psychological challenges. The authors described their intervention as being designed to restart and support completion of these psychological challenges. They proposed that such challenges for the child are 1) to successfully restore a sense of safety, 2) to adaptively grieve losses and renew attachments, 3) to express and resolve disaster-related anger, and 4) to achieve closure about the disaster to move forward.

Separate protocols were written for the individual and the group treatment. Treatment was manual-guided and developmentally appropriate. Three days of training regarding postdisaster trauma psychology and 12 hours of didactic training specific to the treatment manual were provided. Four therapists—two women and two men—three of whom were school counselors and one a clinical social worker, provided therapy. Three hours of group supervision was provided weekly, for 4 weeks, in the course of which the therapists presented their work orally and received supervision aimed at maximizing treatment uniformity. Each group included four to eight children.

Outcome measures included the 24-item self-report KRI, which measured the self-reported frequency of symptoms keyed to DSM-IV (American Psychiatric Association 1994), and the clinician-administered CRI. The person administering the pretreatment and posttreatment outcome measures (the KRI) was the child's therapist. As a converging measure of outcome, the CRI was administered to a randomly drawn subset of treated and untreated children (N=44) by clinicians blind to whether the child had been provided treatment. Results on both the KRI and the CRI showed that treated children had fewer symptoms than untreated children. Posttreatment scores showed significant reductions on the KRI. There were no differences between those who received group treatment and those who received individual treatment. At 1-year follow-up assessment, treated children showed no resurgence of trauma-related symptoms.

This field study was the first randomized, controlled study to evaluate the treatment of trauma symptoms in a postdisaster context. Two important findings were reported. First is the finding that brief psychosocial intervention was efficacious for most of the treated children, and second is that group intervention was as effective as individual treatment. There are several weaknesses in this study, which limit generalization of the findings. The authors did not assess possible comorbid diagnoses, which allows for the possibility that the children who did not improve had other psycho-

pathology complicating their PTSD. Attrition was only partially addressed, as the authors did not report whether the dropouts had significantly different scores on any of the assessment instruments. The same therapists who conducted the therapy administered the KRI, which may have created demand characteristics. Also, video/audio taping the sessions with review by an independent assessor for treatment fidelity would have strengthened the findings.

Goenjian and colleagues (1997) evaluated the effectiveness of a school-based intervention by comparing scores for PTSD and depressive symptoms before and after intervention among treated and untreated groups in an Armenian city devastated by an earthquake. Participants included 64 early adolescents from four schools. Students at two of the schools participated in trauma/grief-focused brief psychotherapy (N=35), whereas students at the other two schools were not treated (N=29). Three years after the earthquake, the mean age of the subjects was 13.2 years. The only statistical comparison of the two groups was by age and numbers of males and females. The treated group included 11 boys and 24 girls with a mean age of 13.2, compared with 11 boys and 18 girls with a mean age of 13.3 in the untreated group.

Due to the limited number of mental health personnel, the two schools closest to the authors' clinic were chosen for treatment. The damage to the four schools and their neighborhoods were the same, and there were no socioeconomic differences between the groups. There was no attrition; in addition, none of the students had received mental health treatment beyond this intervention, had a history of substance abuse, or were prescribed psychotropic medication during the study. The subjects participated in four half-hour group sessions and two to four 1-hour individual sessions over a 3-week period. The treatment sessions were completed during a 6-week period approximately 1.5 years after the earthquake. The trauma/grief-focused treatment addressed five major areas: 1) trauma reconstruction and reprocessing, 2) trauma reminders, 3) postdisaster stresses and adversities, 4) bereavement and the interplay of trauma and grief, and 5) developmental impact. Drawings, discussions, problem solving, relaxation, and reframing techniques were used. No information was reported about the therapists providing treatment.

The target symptoms were defined as PTSD symptomatology and depressive reactions. Outcome measures included the Child Posttraumatic Stress Disorder Reaction Index (Nader et al. 1990) and the Depression Self-Rating Scale (Asarnow and Carlson 1985). Trained mental health professionals administered the assessment instruments. There was no mention of whether the evaluators were blind to treatment condition.

Results showed that the experimental group had reduced posttrau-

matic stress symptoms, and there were no changes in depressive symptoms compared with the no-treatment control group. Even though PTSD symptoms were reduced, they remained in the clinical range for the treated group. In the no-treatment control group, both posttraumatic stress and depressive symptoms increased.

Given the limitations inherent in research targeting a disaster of this magnitude, the study was well conducted. Strengths included use of individual and group modalities, follow-up 18 months after treatment, and clearly defined target symptoms. The study supports the value of providing even brief intervention to support the recovery of traumatized students after a natural disaster. This investigation would have been improved by using random assignment to groups and a manualized treatment protocol, by providing a statistical comparison of the two groups on demographic variables, and by including measures of treatment adherence.

Celano and colleagues (1996) used a pre-post randomized experimental design to compare the efficacy of two short-term treatment programs for sexually abused girls and their nonoffending female caretakers. The experimental treatment was based on Finkelhor and Browne's (1985) theoretical model (known as "RAP" [Responding to Abuse Program] treatment, described below) and "treatment as usual," defined as the supportive, unstructured psychotherapy that sexually abused girls and their mothers would ordinarily receive at the clinic.

Subjects were recruited from the pediatric emergency clinic of a large public hospital (66%), the local statutory child protection agencies (28%), and victims' assistance programs of the court system (7%). Participants included 32 girls and their nonoffending female caretakers. The girls ranged in age from 8 to 13 with a mean age of 10.5. The sample consisted primarily of African-American families (75%), as well as Caucasian (22%) and Hispanic (3%) families. Female caretakers ranged in age from 24 to 61 (mean age, 36). There was no significant difference between the two treatment groups in the length of the interval between disclosure and treatment, and none of the subjects had received treatment for the abuse before their participation in the study. There were no significant differences between subjects in the RAP and treatment as usual interventions relative to child's age or race, relationship of perpetrator, abuse severity, caretaker's history of child sexual abuse, relationship of caretaker to the child, and therapist experience. Fifteen families dropped out after treatment began. The relative percentage of families that dropped out did not differ between the two treatment groups. There were also no differences for the child's age or race, relationship of the perpetrator, abuse severity, caretaker's abuse history, relationship of caretaker to child, and pretreatment scores on the dependent measures.

The RAP program consisted of eight sessions, with approximately two sessions addressing each dimension of Finkelhor's four-factor model. The first two sessions included activities designed to address blame and stigmatization. Sessions 3 and 4 addressed children's feelings of betrayal related to their victimization, and sessions 5 and 6 addressed traumatic sexualization, that is, the process by which a child victim's sexual attitudes, feelings, and behaviors are shaped in a developmentally inappropriate and interpersonally dysfunctional manner as a result of the abuse. The last two sessions were devoted to the issue of powerlessness and concomitant anxiety in an effort to decrease the child's abuse-related anxiety and helplessness and improve assertiveness skills. The parent intervention component targeted self-blame and stigmatization, sense of betrayal by the perpetrator, understanding and coping with manifestations of impact on the child's sexuality of the trauma, and perceptions of powerlessness.

The program was theoretically based and devoted equal time to nonoffending parents and child victims. In addition, the treatment was designed to be culturally sensitive to the needs of a primarily low-income, African-American sample, an underserved and understudied population. The therapeutic materials included a rap song and utilized illustrations of African-American children. This treatment program used developmentally appropriate cognitive-behavioral and metaphoric techniques to address children's maladaptive beliefs, affect, and behavior along these four dimensions. A treatment manual outlined the theoretical rationale and specific treatment activities of the RAP.

The therapists were 18 women psychiatrists, psychologists, social workers, nurses, and trainees in psychiatry and psychology with prior education and experience in psychotherapy with children. All therapists were provided with additional training and supervision in the area of child sexual abuse. Therapists providing the experimental treatment participated in a 3-hour training session before beginning treatment as well as weekly supervision in the use of the RAP curriculum. Trainees providing treatment as usual received weekly supervision highlighting clinical issues relevant to child sexual abuse. Professional clinicians utilizing treatment as usual participated in monthly group supervision sessions.

Target symptoms were defined as psychosocial functioning, traumatogenic beliefs, self-blame, and powerlessness. A structured interview developed by the project investigators was used to obtain information from the caretaker about demographic data, the child's history of abuse and current psychosocial functioning, the caretaker's history of child sexual abuse (if any), past psychiatric history of caretaker and child, and perceptions of disruption to the family as a result of the abuse disclosure. Child outcome measures included the Child Behavior Checklist (Achenbach 1991) and the

Children's Global Assessment Scale (Shaffer et al. 1983) to measure a child's psychosocial functioning and PTSD and Children's Impact of Traumatic Events Scales–Revised (Wolfe et al. 1991) to measure PTSD, self-blame, betrayal, traumatic sexualization, and powerlessness. Maternal outcome measures included the Parental Attribution Scale (Everson et al. 1989) and Parent Reaction to Incest Disclosure Scale (Everson et al. 1989) to measure self-blame, child blame, perpetrator blame, and negative impact. A clinician blind to treatment condition completed the assessments both before and after treatment.

Results indicated that subjects in both the structured RAP treatment and the relatively unstructured treatment as usual intervention improved very similarly on almost all treatment measures. Children in both groups reported a decrease in beliefs reflecting self-blame and powerlessness. Neither group changed in betrayal-related beliefs or sex-related beliefs. The RAP treatment was more effective than treatment as usual in increasing abuse-related caretaker support of the child and decreasing self-blame and expectations of undue negative impact of the abuse on the child. No changes in Parental Attribution Scale scores of child blame or perpetrator blame were found for either group. Clinicians reported that the structured RAP activities were helpful to them in organizing their conceptual and clinical work, which may be particularly advantageous for less experienced clinicians.

This was a theoretically based, methodologically sound and culturally sensitive study in which the theoretical basis defined the target symptoms. The sample description was thorough, the groups were randomly assigned relative to RAP and treatment as usual, and dropouts showed no statistical differences. In addition, the study targeted specific symptoms with valid measures and included a detailed treatment manual. Inclusion and exclusion criteria were well defined, and the authors provided a thorough sample description and discussed past and concurrent treatment. However, the study did not discuss comorbid diagnoses or the clinical significance of findings and did not include any follow-up data. Video/audio taping treatment sessions to ensure adherence to the treatment objectives would have improved treatment integrity. The dropout rate was quite high, as 34% of the families did not complete treatment.

The last of the four studies, by Yule (1992), compared the effects of a school-based early intervention after a ship accident at two girls' schools, where one school accepted an offer of outside help and the other did not. The subjects were 39 girls who survived a ship accident while on a school outing. There were 24 girls in the experimental group and 15 in the control group. No other demographic information was provided. A debriefing meeting was held 10 days after the disaster for all survivors. Two small open

groups met and were based on a problem-solving approach using cognitive-behavioral methods to target symptoms of anxiety, avoidance, and intrusive thoughts. The intervention did not include a manual, and information was not included for replication. There was no information on treatment adherence. Outcome measures included the Fear Survey Schedule for Children (Ollendick et al. 1991), Revised Children's Manifest Anxiety Scale (Reynolds and Richmond 1978), Birleson Depression Inventory (Birleson 1981), and Horowitz's Revised Impact of Events Scale (Horowitz et al. 1979). There was no information on who administered the assessment instruments.

Results indicated that, 5–9 months later, the school in the experimental group showed significantly lower scores on the Impact of Events Scale, with a stronger showing on intrusion than on avoidance items. The anxiety and depression scores were slightly, but not significantly, lower. The experimental group reported significantly fewer fears overall, with treatment effect being stronger for fears unrelated to the accident than those related to the accident on the Fear Survey Schedule.

The study barely met the criteria for inclusion in this review. The author did not provide crucial information for critical evaluation. There was no description of inclusion and exclusion criteria, sample characteristics, differences between the experimental and control groups, past and concurrent treatment, or comorbid diagnoses. There was an incomplete description of the treatment, and it was not manualized for future replication.

Although this early postdisaster treatment study supports the value of offering treatment to traumatized children, its findings are severely limited by the use of two groups that may have differed on a large number of variables. It is difficult to ascertain that the improvement among the treated adolescents is attributable to the effects of treatment. Differential selection, as well as differences in the school environment after the event and after treatment, could potentially account for the different symptomatic outcomes.

Current Status of Empirical Literature

The purpose of this section is to evaluate whether efficacious treatment for traumatized children and adolescents experiencing PTSD symptoms is currently available. The first issue addressed is whether treatment is more effective than no treatment in reducing trauma symptoms. Five of the seven studies reviewed (Chemtob et al. 2002, in press; Goenjian et al. 1997; March et al. 1998; Yule 1992) compared an experimental treatment condition to a waiting list or no-treatment control group. Each of these studies

found the treatment condition to be more effective than the control group. In all of the studies, the period of time since the trauma exceeded 3 months, which suggests that symptoms persisted for at least 3 months without spontaneous remission and were not ameliorating merely due to the passage of time. On the other hand, improvement relative to no treatment is consistent with Kazdin's (1997) view that changes associated with treatment generally are greater than those found in groups not receiving formal treatment. Therefore, the findings of most of the studies reviewed cannot rule out that the treatment effects merely reflected increased attention to the children's needs.

Two of the studies provided controls for the general effects of therapeutic attention and permitted further examination of this issue. Deblinger et al. (1996) and Celano et al. (1996) compared different treatments, each presumed to be active, rather than merely using waiting list no-treatment control groups. Deblinger et al. (1996) found differences between their several treatment conditions, which suggest treatment-specific effects. Specifically, both the child treatment conditions resulted in reductions in the child-centered measures of symptoms, whereas in both the parent treatment conditions the parent-centered measures reflected treatment-related improvements. The combined parent-child treatment condition was more effective than the other conditions. The authors interpreted these findings as reflecting specific effects of treatment. However, the alternative interpretation is that the parent-child treatment was more effective in reducing symptoms because participants received twice as much treatment. It is also problematic that of the children who were randomly assigned to the community care control group, those who received community-based routine treatment did not differ in outcome from the members of the control group who did not receive such care. This suggests that the community treatment comparison was not an active treatment. Regrettably, the key comparison required to address this issue, namely whether the children who had received community care differed from the children who received the experimental treatment, was not reported. Without evaluating such comparisons, it is impossible to conclusively rule out the general effects of therapeutic attention. Further adding to the need for caution in interpreting the findings of Deblinger and colleagues, Celano et al. (1996) found that both cognitive-behavioral treatment and supportive counseling were equally effective in reducing trauma symptoms.

Remarkably, only three studies focused directly on the treatment of PTSD. These studies used PTSD as inclusion criteria, whereas the remaining four studies measured PTSD-related trauma symptoms as targets for treatment. Deblinger et al. (1996) used an individual CBT protocol, whereas March et al. (1998) used a group CBT protocol. Chemtob and col-

leagues used EMDR, an individual treatment. All three research groups reported reductions in PTSD rates as a function of treatment. Unfortunately, March and colleagues used a quasi–waiting-list experimental method, did not randomly assign participants to treatment conditions, and did not report on the effectiveness of their therapeutic fidelity controls. Chemtob et al. (in press) used a no-treatment control group, whereas Deblinger and colleagues failed to use blind evaluators. Even given these limitations, all three studies reported substantial reduction in PTSD symptoms in children with chronic PTSD. These data support cautious optimism with respect to the treatment of PTSD in children and adolescents.

Variants of cognitive-behavioral therapy (CBT) were used in six (Celano et al. 1996; Chemtob et al. 1999; Deblinger et al. 1996; Goenjian et al. 1997; March et al. 1998; Yule 1992) of the seven studies in this review. Four of the studies used either a no-treatment or a waiting-list control group, so the comparison was between treatment and no treatment, and two studies compared active treatment conditions (Celano et al. 1996; Deblinger et al. 1996). The results of these studies, with the exception of the study by Celano and colleagues, showed CBT to be more efficacious than control conditions. The study by Celano and colleagues showed no difference between individual CBT and supportive counseling. The results of the study by Deblinger and colleagues suggested that CBT might be more effective than routine community care (see the discussion above). These latter two studies are more informative because they included a control for the general effects of therapeutic attention (and other nonspecific treatment effects such as therapist and rater expectations), and their results make it impossible to say whether CBT is more effective than other kinds of treatment.

Moreover, it should be noted that the six CBT studies described different treatment packages. Despite a common label, the actual treatment procedures differed widely. Deblinger and colleagues (1996) and March and colleagues (1998) specifically reported using exposure, in addition to a variety of other CBT techniques. Unfortunately, it is not possible from the existing studies to determine whether exposure treatment specifically contributed to the success of these treatments. This is a common problem because outcome studies frequently report beneficial effects but rarely identify "effective" ingredients (Kazdin and Weisz 1998).

One non-CBT study also showed efficacy. A study by Chemtob and colleagues (2002) used EMDR as a treatment for PTSD symptoms. Their results showed a large reduction in symptoms and large effect sizes. Although the authors noted that symptoms had not remitted despite prior treatment, confidence in the findings would have been greater if another clinical treatment (in addition to a waiting list control group) had been

used. What is known at this time is that EMDR treatment led to reduced symptoms, but as with CBT, it cannot be excluded that this was due to nonspecific effects of treatment. Because EMDR is a streamlined and cost-effective treatment, replication with other traumatized populations and the use of an active treatment comparison would provide valuable information on the efficacy of this treatment.

The studies reviewed converge to suggest that structured treatment focusing on PTSD and trauma symptoms can substantially ameliorate the effects of child and adolescent trauma. Unfortunately, current treatment providers generally tend to use counseling approaches. These are usually found to be less effective (Fonagy 1997).

Child and adolescent PTSD treatment efficacy research is significantly less well developed than the comparable adult literature (Solomon et al. 1992). From a clinical perspective, we did not find convincing efficacy for any one therapeutic approach for the treatment of child and adolescent PTSD. The next section of this chapter provides conceptual and technical guidance to help structure and focus the treatment activities of clinicians treating traumatized children. It is implied that the guidelines presented here should be considered in the dynamic context of the child's age; modifications must be made to correspond with the child's language ability and more generally his or her developmental context.

A Brief Summary of Studies of Treatment Without Trauma Symptoms as Outcome Measures

The literature includes 10 studies, detailed in Table 5–3, that did not include any measures of trauma symptoms among their outcome measures, yet still focused on the treatment of children exposed to traumatic events. These studies included children who had experienced sexual abuse, physical abuse, bereavement, and natural disasters and who had witnessed domestic violence. Studies on survivors of trauma have detected a high prevalence of PTSD diagnoses. The target symptoms of these studies generally included depression, anxiety, and behavior problems rather than specific trauma symptoms. With regard to these 10 studies, Table 5–4 describes study adherence to the same rigorous standards of methodology used in Table 5–2 and described above.

A comparison of the studies summarized in Tables 5–1 and 5–3 reveals that the studies addressed a differing mix of trauma types. Table 5–1 includes three studies of natural disasters, two studies of sexually abused children, one of mixed trauma, and one of a maritime accident. Table 5–3 includes five studies of sexual abuse, two of natural disaster, one of physical

TABLE 5–3. Studies of traumatic stress without PTSD outcome measure

Study	Treatment description	Subjects	Treatment type/length	Follow-up/time since trauma	Past/ concurrent treatment	Findings
Berliner and Saunders 1996	Group CBT with SIT and gradual exposure Controlled comparison	103, sexual abuse 32, index group 48, group CBT 8 boys, 72 girls Mean age, 8 23 dropouts	10 weeks of CBT group therapy, the index group focused on SIT and gradual exposure in some of the sessions.	1 and 2 years/ Not reported	Most children had received between 3–6 individual therapy sessions before referral.	No differences were found between groups regarding improvement of fear (Fear Survey Schedule for Children–Revised; Sexual Abuse Fear Evaluation Scale) and anxiety symptoms (RCMAS).
Cohen and Mannarino 1996, 1997	Individual CBT Controlled randomized	86, sexual abuse 39, CBT 28, supportive therapy 28 boys, 39 girls Mean age, 4.6 19 dropouts	Twelve 90-minute treatment sessions: 50 minutes with parent and 30–40 minutes with child	6 months and 1 year/ Within previous 6 months	Not reported.	CBT group less symptomatic on the Child Sexual Behavior Inventory and Weekly Behavior Record. Also the CBT group mean scores on all measures fell to a nonclinical range (CSB, WBR, and CBCL). Treatment results were maintained at 6 months and 1 year.

TABLE 5–3. Studies of traumatic stress without PTSD outcome measure *(continued)*

Study	Treatment description	Subjects	Treatment type/length	Follow-up/time since trauma	Past/ concurrent treatment	Findings
Field et al. 1996	Massage Controlled randomized	60, natural disaster 30, massage 30, video attention 34 boys, 26 girls Mean age, 7.5 No attrition	Compared 30 minutes of back massage to 30 minutes of watching videos, 2 times per week for 4 weeks	None/4 weeks after hurricane	Not reported	After each massage session, decreased state anxiety (State Anxiety Inventory), salivary cortisol and increased Happy Faces Scale. At study end, massage group had decreased anxiety (RCMAS) and depression (CEDS), lower scores on problem behavior, and increased relaxation scores (self drawings and observations).

TABLE 5–3. Studies of traumatic stress without PTSD outcome measure *(continued)*

Study	Treatment description	Subjects	Treatment type/length	Follow-up/time since trauma	Past/ concurrent treatment	Findings
Kolko 1996	Individual CBT vs. family therapy (FT) Controlled randomized	55, physical abuse 20, CBT 17, FT 10, routine services 34 boys, 13 girls Mean age, 8.6 8 dropouts	Individual CBT with child and parent vs. FT vs. routine community services (RCS). Twelve 1-hour weekly sessions within 16 weeks	3 months and 6 months/ Within past 6 months	4 children taking medication	Both CBT and FT groups showed significant improvement compared with RCS. No significant differences between CBT and FT; both decreased children's externalizing behavior (CBCL, YSR), general parental distress (Family Environment Scale) and conflict (Conflict Behavior Questionnaire), and increased family cohesion (Parenting Scale).
Tonkins and Lambert 1996	Group CBT Controlled comparison	22, bereavement 16, CBT 6, control 10 boys, 12 girls Mean age, 9.1	8-week CBT grief therapy group	None/ Within past year	Not reported	CBT group showed significant decrease in sadness, anger, withdrawal, guilt, anxiety, loneliness, helplessness, (all CBCL, TRF) and depression (CDI).

TABLE 5–3. Studies of traumatic stress without PTSD outcome measure *(continued)*

Study	Treatment description	Subjects	Treatment type/length	Follow-up/time since trauma	Past/ concurrent treatment	Findings
McGain and McKinzey 1995	Group CBT Controlled comparison	30, sexual abuse 15, group CBT 15, control 30 girls Mean age, 10.5 Attrition not reported	Once a week for a total of 9–12 months of group CBT	None/ Within 1 year	Not reported.	60%–100% of all participants had abnormal scores on the Quay Revised Behavioral Problem Checklist and Eyberg Child Behavior Inventory. After treatment, 0%–33% of treatment group showed abnormal scores whereas 60%–100% of control group continue to have abnormal scores.

TABLE 5–3. Studies of traumatic stress without PTSD outcome measure *(continued)*

Study	Treatment description	Subjects	Treatment type/length	Follow-up/time since trauma	Past/ concurrent treatment	Findings
Wagar and Rodway 1995	Group CBT Controlled randomized	42, witness to domestic violence 16, group CBT 22, control 26 boys, 12 girls Mean age, 10 4 dropouts	10-week group CBT.	None/ 3 months violence free period	Not reported.	CBT group showed sig. decrease in attitudes and responses to anger (Conflict Tactics Scale) and sense of responsibility for the parents and for the violence (Child Witness to Violence Questionnaire). No sig. difference between groups on sense of safety and support skills.
Sullivan et al. 1992	Individual CBT/ Supportive Controlled comparison	72, sexual abuse 35, CBT 37, control 51 boys, 21 girls Age, 12–16 No attrition	2 hours of individual CBT/supportive therapy per week for 36 weeks.	None/Not reported	All children were residents at a school for the deaf. Control group were sexually abused; however, parents refused treatment.	Children receiving therapy had significantly fewer behavior problems than control group based on CBCL scores.

TABLE 5–3. Studies of traumatic stress without PTSD outcome measure *(continued)*

Study	Treatment description	Subjects	Treatment type/length	Follow-up/time since trauma	Past/ concurrent treatment	Findings
Galante and Foa 1986	Group CBT Controlled comparison	300, natural disaster 62, CBT 238, control 1st–4th grades No attrition	Seven CBT group treatment sessions met 1 hour over 1 academic year approximately monthly	None/6 months	Not reported	There was a greater reduction of at-risk scores (Rutter Behavioral Questionnaire for Completion by Teachers) in children who had been in the treatment program.
Verleur et al. 1986	Supportive group plus sex education Controlled comparison	30, sexual abuse 15, group therapy 15, control 30 girls Age, 13–17 Attrition not reported	Supportive female-led group therapy with sexual education, weekly for 6 months	None/Not reported	All were in a residential facility and received milieu therapy offered at the facility	Group therapy participants showed significant increase in self-esteem (Coopersmith Self-Esteem Inventory) and increased knowledge of human sexuality, birth control, and venereal disease (Anatomy/ Physiology Sexual Awareness Scale).

Note. CBT=cognitive-behavioral therapy; CES-D=Center for Epidemiological Studies Depression Scale; CSBI=Child Sexual Behavior Inventory; CBCL=Child Behavior Checklist; RCMAS=Revised Children's Manifest Anxiety Scale; SIT=Stress Inoculation Training; TRF=Teacher Report Form; WBR=Weekly Behavior Report; YSR=Youth Self Report.

TABLE 5–4. Gold standards for treatment outcome: studies without traumatic stress outcome measures

Study	PTSD or trauma symptoms	Clearly defined target symptoms	Reliable valid measures	Blind evaluators	Assessor training	Manualized replicable specific treatment	Random assignment	Treatment adherence
Berliner and Saunders 1996	No	Yes	Yes	Yes	Not reported	Yes	Yes	Yes
Cohen and Mannarino 1996, 1997	No	No	Yes	Not clear	Not reported	Yes	Yes	Yes
Field et al. 1996	PTSD, only pretreatment	Yes	Yes	Yes	Not reported	No	Yes	No
Kolko 1996	No	No	Yes	Yes	Not reported	Yes	Yes	Yes
Tonkins and Lambert 1996	No	No	No	No	Not reported	Yes	No	No
McGain and McKinzey 1995	No	No	Yes	No	Not reported	Not reported	No	Not reported
Wagar and Rodway 1995	No	Yes	No	No	Not reported	Yes	Yes	Not reported
Sullivan et al. 1992	No	No	Yes	Yes	Not reported	No	No	No
Galante and Foa 1986	No	Yes	Yes	Yes	Not reported	Not reported	No	No
Verleur et al. 1986	No	Yes	No	Not reported	Not reported	No	Not reported	Not reported

abuse, one of bereavement, and one of witnesses to violence. The major difference is that Table 5–1 includes primarily natural disaster studies and Table 5–3 primarily sexual abuse studies. At this time, it appears that treatment research for victims of sexual and physical abuse, which usually involves multiple traumatization and a complex medicolegal environment, is not as well advanced as research on single major traumatic events, such as natural disasters.

A Conceptual and Practical Framework to Guide Single-Event Child Trauma Treatment

In this section, our conceptual perspective and a practical description of our clinical approach to single-event trauma in children are briefly presented to inform clinicians beyond what is generally presented in empirical reports of research. It should be highlighted that given the current level of knowledge, this information is presented as a heuristic starting point for less experienced child trauma clinicians and as a reference to provoke comparison between the clinical approaches used by more experienced clinicians. This chapter does not address the treatment of recurrent trauma by family members. Such traumas differ from the impact of single-event trauma in two major ways. First, the regulation of safety in children is based on the core biological assumption that one's caretaker can be trusted, and that the "enemy" comes from without (typically a predator). When the "predator" is a close family member the distinction between self (friend) and not-self (not-friend/predator), which is at the core of the management of personal safety, becomes profoundly confused. This can affect the normal development of cognitive structures that support both the management of safety and the process of individuation in the child. Consequently, the sensitive treatment of such traumas represents a major challenge to clinicians. The problems associated with the treatment of such traumas are sufficiently distinct from the treatment of single-event trauma that they fall beyond the scope of this chapter.

Events that are potentially traumatic are defined in DSM-IV as involving actual or threatened death or serious injury, either to one's self or to significant others. Furthermore, the prospect of death or injury must provoke intense fear, helplessness, or horror. As such, these types of events obviously directly affect the ongoing sense of psychological safety, even as they serve to mobilize automatic psychological processes that support survival in the face of threat.

Where children are concerned, the experience of safety is inextricably bound up not only in the self, but also in the children's perception of the

safety and competence of caretakers. Moreover, in most circumstances the same events that threatened the child are also likely to have threatened his or her caretakers. For example, children exposed to disasters or to automobile accidents are usually so exposed while in the company of caretakers. This means that restoring a sense of safety to children usually requires addressing the experience of both child and parent or caretaker. This is one critical way in which children differ from adults and even older adolescents.

Clearly, the youngest children experience most intensely this sense of shared identity in the context of danger. Indeed, in very young infants the traumatic event is experienced primarily through its impact on the relational context that protects the infant. Barring direct physical injury, the very young child is traumatized in large measure because of the impact of the trauma on those charged with maintaining his or her physical and psychological safety. Thus, this perspective requires considering the child as operating both subjectively and descriptively within a broader psychological system that serves to maintain and regulate psychological safety. The most effective interventions are those that recognize that trauma disrupts this adaptively embedded quality of the child's experience and seek to restore its functionality.

The effective treatment of traumatized children requires us to understand how the sense of psychological safety is affected in children. The most significant factor is the automatic activation of specialized information processing mechanisms that assist the person in dealing with danger. We have previously described this as the activation of a "survival mode" of functioning (Chemtob et al. 1988). This model, unlike pathology-based models, focuses attention on the evolution of specialized information processing mechanisms that support an organism's response to threat. PTSD and trauma are proposed to reflect a lowered threshold for the activation of "survival-mode" functioning.

Survival mode may be characterized as reflecting the "emergency" response of people. Just as animals faced with predator threat respond in relatively stereotypical ways, we have proposed that individuals as well, when faced with threat, react in "prepared" ways rooted in evolution that are specialized to support surviving threats.

Survival mode is automatically activated by evidence of life threat and preempts normal modes of response. When in survival mode, people respond more rigidly and their behavioral repertoire is less flexible. This does not reflect mere "regression" but rather the activation of information structures that are specialized for threat processing. Such specialization has the virtue of increased response speed and decreased dithering. However, once survival mode is activated, nonthreat information is processed as reflecting on survival. That is, once survival mode is activated via confirma-

tion biases, information about threat leads to active seeking of confirming evidence of threat.

The activation of survival mode often induces a sense of identity fragmentation, as most people identify themselves with the continuity of their experience in normal "safe" circumstances. This automaticity is also disruptive of normal functioning because it means an increased fragmentation in the sense of self between normal functioning and the decreased posttraumatic threshold to shift into survival mode. An additional important characteristic of survival mode activation is that by virtue of focusing resources on threat processing, self-monitoring is significantly reduced. As a consequence of the loss of self-monitoring and the automaticity of survival-mode activation, people do not necessarily recognize that they are operating in survival mode.

We have further proposed that in human beings survival mode incorporates two specific survival subsystems, a threat detection system and an attachment system. The threat detection system has developed to efficiently acquire information about threat and risk in the environment. Its activation entrains a bias to perceive danger in the environment, global (gestalt) processing, a lowered threshold for responding to evidence of threat (which can be misperceived as generalized impulsivity), and multimodal information processing. This means physiologic arousal, sensory information, and cognitive expectations are all integrated in a positive-feedback bias (confirmatory bias). Partial information of threat from multiple channels is sufficient to activate the organism's emergency response.

The attachment system has been relatively neglected in research on adult PTSD. However, it is central in the survival response of children. The attachment system reflects the fact that we are social animals whose inclusion in a social group determines our survival. Thus, when faced by threats we immediately assess not only where and what the threat is (where the predator or enemy is) but also who is on "our side" and who is "against us." In sum, concerns about social inclusion and exclusion reflect calculations about one's strength relative to the threat and take into account support from one's "extended social self" as a critical resource.

We have proposed that normal relationship modes are organized differently in threat contexts. For example, warriors in battle form extraordinary personal bonds that sustain their effective action and increase their personal chances of survival. Similarly, in disaster circumstances, people experience automatic nonconscious increases in altruism and in feeling that "everyone is in the same boat." This automatic activation of powerful kinship feelings leads to increased social cohesion, increased social support, and increased cooperation at the time it is most needed. The distinction between what is "mine" and what is "yours" appears to be diminished dur-

ing times of disaster, reflecting shifts in the relative fluidity of the self-other boundary. It should be recalled that these shifts in the mode of attachment are activated automatically and with a loss of self-monitoring as part of the activation of survival mode.

Relatively little is known about these structured survival programs in children. However, the research programs stimulated by Bowlby's (1988) seminal contribution have focused our attention on the importance of specialized psychobiological mechanisms in children that have evolved to regulate their sense of safety through monitoring their distance from their mother. In this regard, the important theoretical work that has tied psychological individuation and separation to the capacity to regulate proximity and separation is extremely important in guiding the child trauma therapist. In effect, this work highlights that psychological safety is maintained and developed by anchoring safety through maintaining a tie to a caretaking other. The purpose of exploration becomes the development of increased capacity to maintain individuated safety. Conversely, with development comes increased capacity for flexible exploration. One has only to examine a child who is exploring the environment (while keeping tabs on his mother) and becomes frightened to understand the impact of threat on traumatized children. The child's reaction is almost universally to retreat in alarm to the mother. Thereafter, the child becomes substantially more cautious in exploration and retreats back to the mother in reaction to "evidence" of threat that previously would have been insufficient to qualify as threatening. This lowered threshold for accepting information as evidence of threat obviously interferes with the activation of processes that would otherwise promote a sense of safety.

The clinician's task is to actively help the child intrude on the automatic activation of survival mode by restoring his or her capacity to evaluate the presence of threat. This is done by supporting the restoration of regulatory capacity. The child must be aided in reacquiring skills for regulating arousal, for making exploratory cognitive assessments, and for maintaining an individuated self, all such skills being naturally compromised by the automatic activation of survival mode. In cases where children never acquired the requisite skills to maintain age-appropriate psychological safety, these skills must be taught for the first time. In this latter case it is necessary to reverse the interference of trauma with the normal developmental process, the process in which increasingly sophisticated self-regulatory skills are acquired to support safety.

Role of the Therapist

Multiple root metaphors inform the actions of trauma therapists. These usually reflect particular theoretical models of etiology. We believe that

these metaphors are largely complementary. The challenge for therapists is 1) to consistently apply them at the right time and in the right context, 2) to avoid mistaking a part of the function of treatment for the whole, and 3) to use multiple treatment means to achieve a clearly articulated therapeutic aim, focused on clearly specified treatment targets.

For example, one of the earliest metaphors incorporated in psychotherapeutic practice is that of catharsis. This metaphor was rooted in the proposition that psychological discharge is akin to the discharge of a reflex. It was thought that once discharged, the dissipation of "blocked" psychological energy would result in resolution of the problematic symptom. This is implicit in the actions of therapists who invite their patients to cry or "let it all out." In fact, this metaphor is a double-edged sword. Simply expressing one's feelings can in fact be re-traumatizing. The expression of feeling while mobilizing memories of a traumatic event does not necessarily resolve the psychological experience.

A more modern elaboration of the catharsis proposition is the notion that the construction of a cohesive narrative representing an otherwise fragmentary experience permits the elaboration of more adaptive representations of events. Thus, the emotional reworking of a traumatic memory in the course of elaborating a more complex representation of the event incorporates corrective information about the experience. This reworked and elaborated representation has different psychological characteristics that permit a more adaptive (less rigid) set of responses to the traumatic event. Our approach differs from this in putting the emphasis on the release of evolutionary structures specially suited for threat response from regulatory control when faced with a life-threat. The subsequent facilitation of activation of survival mode is incompatible with the activation of regulatory processes that sustain psychological safety. Thus, rather than merely seeking assimilation of the experience, we seek to restore and teach the skills that permit the traumatized child to suppress the context-inappropriate activation of survival mode.

Another treatment metaphor regarding trauma originates in learning-theory models of the etiology of phobic disorders. In such models, it is assumed that there is a failure to incorporate corrective information about the phobic object because avoidance drives the fearful person away from contact with the fear-provoking stimuli. This avoidance therefore interferes with normal learning about the realistic characteristics of the feared object. Although it appears that exposure to traumatic events is an important component of effective trauma treatment, it is not clear whether it is the exposure component or the support of a responsive therapist in the context of exposure that is effective. Moreover, the learning-theory approach generally tends to underestimate the importance of evolutionary

mechanisms in the genesis of psychopathology, particularly trauma-related pathology.

We believe that much of the apparent effectiveness of exposure is not due to exposure per se but rather to the support of a trusted therapist who serves as an external regulatory support, permitting the patient to have an increased capacity to master an otherwise frightening and overwhelming reactivation of the traumatic experience. Consequently, we put the emphasis in using therapeutic exposure on empathic management of dosage. The dose of exposure should be used much like weights are used by physical therapists engaged in muscle rehabilitation. The dose of exposure should never exceed the ability of the child to feel mastery, while requiring an effort just beyond what the child might have undertaken without the encouragement and skilled guidance of a therapist. Our emphasis therefore is on supported and sustained practice of regulatory skills in the face of the challenge of exposure.

Thus, the treatment perspective we prefer, and which we believe has been largely neglected in this field, is that trauma treatment is rehabilitative. Its purpose is to support restoring self-regulatory skills that maintain psychological safety when such skills are suppressed by trauma-related facilitation of survival responses. Moreover, we believe that in children (and adults) the treatment of trauma is often habilitative. It must specifically support acquiring age-appropriate self-regulation skills when fundamental psychological skills were never acquired because trauma interrupted or distorted the normal processes of skill acquisition.

Treating Single-Event Trauma

Clinic-Based Approach

Among single-event traumas are motor vehicle accidents, animal attacks, exposure to domestic and community violence, physical assault, and other life-threatening experiences. Children who experience single events that are traumatic often present for treatment in traditional clinical settings, whether this be an individual practitioner's office or a hospital- or clinic-based practice. However, presenting because of a dramatic single event does not in and of itself permit ruling out a history of chronic victimization. Clinicians should recognize that such chronic victimization, for example, sexual or physical abuse, may not only constitute part of the pretrauma environment but may also be ongoing. Therefore, a complete trauma history should be obtained as part of an initial assessment.

In treating traumatized children, the clinician must recognize that the trauma of children affects both the child and the caretaking system in which the child is embedded. Parents and caretakers are directly affected

by the trauma in cases where they are exposed to it at the same time as the child. On an indirect level, they are affected because the suffering of one's child can mobilize extremely strong realistic and unrealistic reactions. As trauma interferes with the child's regulatory operations that sustain a sense of psychological safety, parents and caretakers can be emotionally reactive, making it difficult for the child to reestablish self-regulation. Their own symptoms can interfere with empathy and psychological availability to their child, rendering them ineffective in modulating the child's increased reactivity. An overanxious parent will not be resilient when the child's withdrawal, either through overt hostility or covert avoidance, engenders feelings of rejection in the parent. Consequently, involvement and education of parents in the treatment of traumatized children is critical.

In the ideal treatment situation, the therapist must not only educate parents as to the particular treatment needs of their child but must also educate parents so that they understand the normative (what is to be expected) effects of trauma. This will hopefully enable parents to avoid overpersonalizing their child's reactions and instead allow them to provide an environment capable of supporting regaining safety. In addition, it is clearly important that parents be taught specific techniques to help the child gain mastery over the trauma experience. Parents must also be provided with the assurance that the therapist will support them throughout the recovery process. This will enable the parents to be more resilient and flexible in the face of the helplessness that their child's pain engenders. Furthermore, this increased resilience will permit the therapist to tactfully explore the impact of the traumatic event on the parents. In doing so, it is extremely important to treat parental reactions as reflecting positive attempts at caregiving. For example, guilt that one did not prevent child victimization should be reframed as evidence of concern and responsibility.

Children also benefit from age-appropriate education regarding their experience. Key elements of this education include reassurance that 1) other children have had such experiences and have gotten to feel better, 2) the doctor has helped other children with similar problems and can help the child get better, and 3), the doctor can tolerate and absorb the wide variety of feelings that the child might feel toward him or her. Recognition of this last factor is particularly important because expressing negative feelings (anger, disappointment, betrayal) toward parents (a major source of safety) can be extremely threatening to the child who may fear that such expressions might cause rejection by his or her parents.

In working with older children it can be very useful to explain the therapist's role as being akin to that of a special teacher who is an expert in teaching children about horrible experiences. This permits the therapist to take on a supportive coaching role that is familiar to many children. Clari-

fying the role of the therapist reduces ambiguity about the roles of each participant and is therefore supportive, increasing the child's sense of competence and therefore safety. Failing to clarify the purpose of therapy, and the role of the therapist, sometimes leads to the child perceiving the therapist as dangerous, and even as an enemy, "unnecessarily digging up the painful past," which is better left alone.

A critical first step for successful treatment is the specific assessment of a child's capacity to maintain a treatment relationship in the face of threat activation. Threat activation affects the relationship of the child to caregiving adults. Typically, a child faced with threat and reminders of the trauma will react either by clinging to adults for safety or by withdrawing from contact. Clinging interferes with a range of ego functions such as exploration and the establishment of autonomous identity. Specifically, it interferes with any activity by the therapist that seeks to support the child's independence, as such activities are experienced as threatening to the child's sense of being protected. Conversely, children who are withdrawn typically have concluded that they cannot rely on the protection of adults and therefore become difficult to make contact with, which includes difficulty in maintaining a treatment alliance. In both instances, what has occurred is an increased rigidity in relationships with caretakers that interferes with the flexible exploration and rapprochement that are hallmarks of healthy relationships with adult caretakers. The therapist's task is to focus quite explicitly (though usually in displacement) through the medium of play, drawing, and the like, on the relationship of the child to the therapist. Themes of strength versus weakness, of curiosity versus hiding, and of trust versus betrayal usually dominate this aspect of treatment. For example, a child who has been severely bitten by a dog will often feel betrayed by parental caretakers. Simultaneously, he or she will exhibit fluctuations between feeling strong and feeling weak, which will usually be exaggerated. And there will be concerns about trusting adults concurrent with trusting animals. Reenacting these concerns with the therapist through the medium of play addresses specific trauma symptoms and their deeper impact on the child's capacity to relate to adults effectively.

Although one can expect that the core response to trauma will involve similar major components among most children, each child lives that aspect of the trauma in a highly distinct and personal way. Generally, single-event traumas seem to affect four dimensions. The initial impact usually involves shock, disbelief, and a sense of helplessness, expressing itself around themes of vulnerability and abandonment. The second issue to emerge usually involves losses experienced by the child as a result of victimization. This can be highly specific ("my kitty cat died") or quite general ("I am sad"). Third, anger and scapegoating are often expressed both as a

defense against the sadness and as a primary affect reflecting mobilization to address recovery. Finally, as recovery proceeds successfully, one often observes the child struggling to create new capacities for coping based on working through the trauma. These generic steps on the way to psychological recovery are modified by the particular characteristics of specific traumatic events. For this reason, inexperienced trauma therapists would do well to consult more experienced therapists who have greater knowledge of the common aftereffects of particular trauma.

There are a number of aspects of each trauma that must be explored. These include the impact of the trauma on cognition, on affect and arousal, on the mode of relationship (attachment), and on the child's sense of identity. The theme of safety versus feeling unsafe or threatened provides the common lens through which to explore these issues. This analysis should be done in the form of reconstructing the experience, beginning with what was going on well before the trauma took place. Such exploration is a key part of the actual treatment because it recapitulates the experience in detail while assisting the child to reestablish a capacity to create a cohesive narrative. We emphasize that this narrative is defined not only by talking, but rather mostly by drawing, playing, play-acting, and a wide variety of other child therapy techniques.

Because the recollection of traumatic experiences is so compelling, it tends to weaken a child's sense of what is past and what is present. Restoring such clear temporal articulation is an important goal of treatment. The therapist's support enables the child to reframe his or her experience by maintaining, side by side, a representation of the traumatic experience (with all its impacts) that is linked to the past, with a representation of safety that relates to the present. In this regard, it is critical to always weave into the treatment a clear differentiation between what happened in the past and what is occurring in the present. In providing the child with the necessary support so he or she can ultimately relive the traumatic experience from a position of mastery, it is also important to teach the child to monitor his or her internal states to anticipate being overwhelmed by reminders of the traumatic experience.

In exploring the impact of trauma on cognition, it is cleat that, as with adults, trauma induces cognitive deficits in children. These deficits, not usually recognized as taking place because of trauma-induced loss of self-monitoring, include a heightened sense that dangerous events are probable and a tendency to proactively color experiences as being more negative. There is often a tendency to interpret events using a global frame of reference, which can lead to missing either disconfirming cues or cues of actual danger. Also, dissociative cognitive styles can emerge that are expressed as cognitive avoidance. These cognitive deficits can lead to the child being

less competent in judging threat. As cognitive deficits are identified, and the child is helped to recognize them, a skill-building approach aimed at increasing the child's cognitive competence in the face of threat activation is very useful. The therapist can use play in rebuilding the child's skill, which itself induces a different shared frame of reference regarding the trauma.

The impact of trauma on affect and arousal is an area that defines yet another task of the therapist, that of helping the child to reestablish or gain skills in the modulation of affect and arousal. When faced with threat, affect takes on considerable primacy in orienting the child to the danger and in guiding an effective adaptive response. In the posttraumatic context, the reaction to events that activate a sense of threat tends to be characterized by affective primacy. The child reads the intensity of reaction as representing confirmation that the situation is unsafe. This confirmatory bias acts as a positive feedback loop, threat activation inducing affective reaction and arousal, further confirming threat. Because of the lack of self-monitoring, this feedback increases the intensity of affect and arousal without inducing a regulatory cognitive response ("I am overreacting; this is safe"). The role of treatment is to reestablish the ability to self-monitor the automatic activation of affect and arousal and to support the establishment of coping responses (seeking help from a grownup, drawing feelings, breathing deeply, thinking about what to do) that are incompatible with reacting automatically to threat.

The experience of trauma has been linked to the automatic activation of survival mode, which in turn affects a child's sense of self-cohesion and identity. The reaction to threat preempts other processing, contributing to the sense that the child's reaction has a life of its own. Traumatized children are repeatedly set off into survival mode (the threshold for perceiving the presence of threat is lowered), which creates discontinuity in their sense of identity. Consequently, the child often feels a degree of dissociation from his or her normal sense of self. The reactions and thoughts that are familiar points of self-reference are replaced with relatively rigid responses that serve to facilitate survival. This sense of self-fragmentation itself decreases feelings of safety. Part of the task of treatment in this regard is to explain to the child the nature of a survival reaction, thus restoring a sense of continuity in the child's sense of self. Obviously, this occurs primarily through play, play-acting, and other metaphorical modes of communication. For example, it is sometimes helpful to play with the child (either directly or in displacement through the use of drawings or puppets) at being an animal, peacefully minding his or her business, that gets surprised or frightened by a threatening other animal. The therapist then notes the difference between how the animal acts and feels when peaceful and when threatened.

This contrast permits heightening both the contrast between the two modes of response and the fact that they are responses emitted by the same animal.

The purpose of exposure in dealing with cognitive effects, affect and arousal, attachment, and sense of identity is primarily to reactivate the child's threat response. As noted above, we do not believe that exposure on its own is sufficient. Indeed, it is often so upsetting to both child and parent that it can engender treatment avoidance and premature treatment termination. Rather, dosed exposure is most useful as a means to intensify the components of the child's threat response so that they can be mastered bit by bit. When dosed exposure is used, this permits educating the child regarding the various components of the child's thoughts, feelings, and actions when provoked into survival mode. As each of these components is identified, the child is first taught to self-monitor these components of his or her reactions and then is taught to interrupt these reactions by activating responses incompatible with survival mode. This serves to restore increased mastery and flexibility in the child's repertoire.

The final phase of treatment establishes skills necessary to care for oneself in the future if faced with similar threats. Often, this can be accomplished by putting the child in the role of "teacher" to other (usually) imaginary children regarding his or her traumatic experience and the methods of coping with it. The emphasis in this phase of treatment is teaching the child to distinguish between feeling safe and feeling realistically threatened. The child is helped to anticipate such situations and to rehearse coping scenarios using a stress inoculation framework.

Community- and School-Based Approaches

In contrast to children who present in clinical practice one at a time, natural disasters, technological disasters, or other large-scale events usually involve a large number of potentially affected children. Because of the numbers involved, clinicians are called on to use different strategic models to guide their interventions. Guidelines for these types of events are presented below. In instances of disaster, therapists should recognize that they must adapt their interventions in different ways during different phases of disaster recovery. One can conceptualize the phases of disaster impact as preimpact; during impact; and immediate, early, middle, and late disaster recovery. Consequently, it should be obvious that interventions intended to support traumatized children must be appropriate to the needs of each period.

In this regard, a public health perspective is a useful framework to guide clinicians. In the preimpact period, educating communities and supporting planning for coordinated disaster management is akin to primary

prevention. In this way, the primary systems that affect children (schools, parents and caretakers, media, disaster authorities) will be better able to mobilize during a disaster and to act in coordinated ways that are sensitive to the needs of children, thus reducing the likelihood of psychological morbidity. Hopefully, such preparation will yield effective intervention during the actual impact phase. Unfortunately, resources to support psychological recovery usually are not deployed until after the fact. It therefore behooves clinicians to proactively pursue integration of knowledge about the psychological impact of disaster on children in school disaster planning and in community disaster planning efforts. Authorities will usually welcome offers of proactive support, together with education about its importance. Proactive planning leads to building working relationships before the disaster's impact. As a result, when disasters do strike, it is easier to enlist cooperation based on preexisting working relationships.

Because natural disasters often affect the community's infrastructure and lead to evacuation to safe areas, early postdisaster intervention will generally occur in the context of community shelters (interestingly, schools are often designated as such shelters). In such instances, one is not directly treating PTSD but rather is providing psychosocial support to assist parents and others in the care of their children. Such early interventions are intended to augment the natural capacities of parents to maintain their children's psychological safety in the context of a threat. It is assumed that such early intervention is reassuring and supportive and may help prevent the later development of PTSD. However, the latter assumption has not been empirically evaluated as yet.

Immediately following the active phase of the disaster (e.g., after the hurricane or after the major shocks of an earthquake), clinicians will typically continue to provide education and reassurance through communal channels (e.g., relief/assistance lines), to provide practical training to paraprofessionals and others involved in the recovery effort, and to engage available media resources in an effort to provide information regarding children's normative reactions. Such community education provides reassurance to parents by indicating the normative characteristics of postdisaster psychological reactions; increases community capacity to maintain safety; and provides referral sources for situations when it is appropriate to seek outside assistance for children. An additional role for more senior and experienced trauma clinicians is to serve as consultants to the civil authorities regarding community psychological concerns and to help the individuals responsible for managing the crises in dealing with the extraordinary stresses imposed by large-scale disaster recovery efforts.

Early efforts to assist in the children's psychological recovery from disaster usually begin with the reopening of schools, the timing of which is

itself a sensitive issue. In determining the appropriate time to reopen a school, the need to restore predictable order in the lives of children and to provide a structure for the safekeeping of children while freeing adults to tend to recovery tasks must be balanced with the recognition that teachers and other school personnel have themselves been affected by the disaster. Opening schools too early can leave teachers feeling as if their needs are not considered important. Conversely, delaying school opening impairs community recovery. Clinicians who operate in a postdisaster environment will often be asked to advise on the timing of school reopening. Their role in this regard should be to clarify the psychological component of the decision and to be advocates for maintaining flexibility. In my (CMC) experience, reopening schools as soon as possible is effective when coupled with explicit provisions permitting flexibility for school personnel to determine their ability to return to school. School administrators should be made aware that divisiveness could result among administrators and personnel based on how this decision is managed. Moreover, the decision will be evaluated in the context of biases perceived as already existing among top officials and principals. Thus, for example, if a school administrator is viewed as being too concerned about public opinion, early reopening will tend to be perceived as further evidence of caring more about public opinion than about staff. This confirmatory bias can complicate recovery efforts by creating divisive factionalism.

Clinicians who have established predisaster relationships with top school officials will find it much easier to work in schools once a disaster actually occurs. Failing such preparation, it is important to understand that schools are normally vigilant about letting outsiders in. Whereas this is usually relaxed during crises, it remains extremely important to develop collaborative relationships with key people who are highly respected and can provide credibility internally as well as prevent cultural missteps by outsiders. Such partners can make it possible to recruit a far higher level of cooperation with psychological interventions.

In the early phase of school-based intervention, a number of models have been used that are all largely derived from psychological debriefing models. For example, certain school districts such as the Los Angeles Unified School District have developed debriefing models that involve up to several hundred students working through the aftereffects of a catastrophic experience. More frequently, clinicians use the individual classroom as a locus of intervention, sometimes collaborating with the classroom teacher, sometimes merely having the classroom teacher in the classroom to ensure cooperation from children. Others have provided school counselors with brief specialized training and relied on their established relationships with teachers and students to maximize the effect of the intervention.

Generally, all the interventions have as a common goal helping students create a coherent cognitive map of the events that transpired, generating support to assist students in dealing with the shock of the experience and in managing loss, and assisting children in generating positive coping responses. Remarkably, given that many now consider this type of support a standard of practice, we are aware of no published data demonstrating that these activities are really helpful to students. However, they certainly reduce the sense of helplessness among adults. Our approach is to proceed on multiple fronts. We generally seek to provide training for school counselors and key administrators (principals, vice principals) to increase the capacity within schools to manage the aftereffects of the disaster. We typically also provide an experience that joins elements of group debriefing with education for teachers to assist them in understanding their own experience as a prelude to helping learn how to assist their students' needs. An important part of the training is to help the adults recognize the symptoms that can characterize children whose recovery does not proceed apace. In relatively few instances, we have been able to provide information to parents. More often, we send an informational letter or brochure to parents to alert them to the nature of normative responses to disaster among children.

Relatively recently, a number of clinicians have recognized that disaster recovery takes substantially longer than had been previously thought. Because federal assistance dollars are usually provided for no more than a year, there has been a tendency to align activities to support the recovery of children to the period of time in which funding is available. This early phase of recovery is the easiest, because during this time most people experience distress and are therefore available to help each other. However, as time passes and exhaustion sets in, trauma victims—and children in particular—who continue to experience disaster-related trauma symptoms begin to be circumspect about admitting their continued distress. Children often acknowledge the burdens placed on their parents and prefer to keep their own symptoms hidden for fear of overtaxing their parents. As a result of this middisaster dynamic, it becomes important to use strategies that rely on large-scale screening of children for trauma symptoms. In our own work, we elected to screen children across an entire school district. We then provided trauma-specific treatment to the children with the highest level of trauma symptoms. We used specially trained counselors to provide treatment that was conceptualized as secondary prevention. Specifically, we sought to mobilize the children's own recovery capacity. Although our treatment did improve symptoms, the effect sizes were quite modest. This may have been accounted for by the fact that although most students got better after treatment, some did not improve and some got worse. Our fol-

low-up study using EMDR and trained doctoral-level clinicians yielded substantially larger effect sizes. This reopens the question of whether one should use doctoral-level clinicians from the outset and encourages further evaluation of EMDR for postdisaster treatment. For greater detail regarding our approach to middisaster recovery, please see Chemtob et al. (1999) and Chemtob et al. (in press).

The final stage of supporting postdisaster recovery requires assisting the school community to generate something new, of value, produced as a result of the disaster. It is important to do so in order that the memories of the disaster are capped by a positive achievement, symbolizing the capacity of the community to create something positive out of the hardships of the disaster. An example from our work on Kauai may clarify this point. On Kauai, one valuable lesson learned in the schools after the disaster is that schools need to be more welcoming to "outsider" child helpers such as psychologists than they had been under normal circumstances. After the early phases of the disaster recovery process, the schools sought out additional help for children who were still having difficulty. This new school openness led to the formulation of a new plan on Kauai that restructured and greatly expanded mental health services to a school-based mental health system. After the disaster, and after much struggle, the Kauai school system was able to create mental health clinics in each of the Kauai schools. The schools' community united to advocate for a substantial increase in mental health resources. As a result, the island saw mental health resources increase from 1 psychologist to 15 psychologists and from 10 social workers to 22 and saw a doubling of child psychiatrist resources. The island's school-based child mental health system has become the model for the State of Hawaii. This is a source of pride and increased community cohesion for parents, teachers, and professionals alike. Most important, it represents a lasting contribution to the welfare of children in this island community that would not have been created had the community not mobilized effectively to care for its disaster-affected children.

Looking Forward

It is clear that knowledge of the treatment of traumatized children lags well behind the knowledge of adult trauma treatment. This is largely because the field has not engaged in the same systematic research evaluating the nature of the consequences of trauma in children that has been undertaken with adults. Although there is increasing enthusiasm among clinicians to diagnose PTSD in children, many trauma clinicians continue to express concern regarding whether the PTSD diagnosis, derived for adults, accurately fits the clinical phenomenology of traumatized children. To begin to address this critical issue, it is necessary to conduct prospective studies of

children exposed to traumatic events to empirically characterize the type, frequency, and patterning of posttraumatic symptoms in children.

Much research on trauma and PTSD in the last 20 years has focused on fear-related systems of response. This is appropriate for many types of adult trauma. However, as noted above, psychological safety in children is mediated in a much larger part through the attachment system. There is a clear need to develop theories of trauma that take this into account. As the specific impacts of trauma on attachment are further clarified, specific treatments can be developed and evaluated that address these consequences in focused and effective ways. The ultimate promise of improving the understanding of trauma treatment in children is that it will increase the understanding of the ways in which developmental vicissitudes and trauma influence children and also the child still present in every adult.

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